WEST Search History

Hide Items | Restore | Clear | Cancel

DATE: Wednesday, February 21, 2007

Hide?	Set Name	Query	Hit Count
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=ADJ		
☐	L7	L5 and(progenitor or stem)	4
☐	L6	L5 same (progenitor or stem)	0
☐	L5	'Lundgren-Akerlund'-Evy.in.	5
☐	L4	9951639.pn.	3
☐	L3	200075187.pn.	2
☐	L2	0075187.pn.	2
☐	L1	2005253442.pn.	2

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     FILE 'DISSABS, 1MOBILITY, AGRICOLA, AQUASCI, BIOTECHNO, COMPENDEX,
     COMPUAB, CONFSCI, ELCOM, HEALSAFE, IMSDRUGCONF, INSPEC, LIFESCI, OCEAN,
     PAPERCHEM2, PASCAL, POLLUAB, SOLIDSTATE, ADISCTI, ADISINSIGHT, ADISNEWS,
     ANABSTR, ANTE, AQUALINE, BIOENG, BIOSIS, ...' ENTERED AT 07:52:59 ON 21
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L1        10923 S (OSTEOBLASTS OR CHONDROCYTES OR MYOCYTES OR ADIPOCYTES OR NEU
L2          200 S L1 (S) (ALPHA (A) (11 OR 10))
L3          138 DUP REM L2 (62 DUPLICATES REMOVED)
L4           85 S  MESENCHYM? (S) (ALPHA (A) (11 OR 10 OR MT))
L5           53 DUP REM L4 (32 DUPLICATES REMOVED)
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                SET DETAIL OFF
                SET LINE LOGIN
                SET DETAIL LOGIN
L6          109 S L3 NOT L5
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ANSWER 36 OF 53 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:881196 CAPLUS
DOCUMENT NUMBER: 134:38626
TITLE: Cloning, characterization and physiological and therapeutic uses of human integrin heterodimer and its novel subunit α11
INVENTOR(S): Gullberg, Donald
PATENT ASSIGNEE(S): Active Biotech AB, Swed.
SOURCE: PCT Int. Appl., 78 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000075187	A1	20001214	WO 2000-SE1135	20000531
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2375876	A1	20001214	CA 2000-2375876	20000531
EP 1181317	A1	20020227	EP 2000-939232	20000531
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2003501077	T	20030114	JP 2001-502468	20000531
AU 770652	B2	20040226	AU 2000-54355	20000531
JP 2006246894	A	20060921	JP 2006-119501	20060424

PRIORITY APPLN. INFO.:

SE 1999-2056	A	19990603
JP 2001-502468	A3	20000531
WO 2000-SE1135	W	20000531

AB A recombinant or isolated integrin heterodimer comprising a novel subunit α11 in association with a subunit β is described. The full-length cDNA for this integrin subunit, α11, has been isolated. The open reading frame of the cDNA encodes a precursor of 1188 amino acids. The predicted mature protein of 1166 amino acids contains 7 conserved FG-GAP repeats, an I-domain with a MIDAS motif, a short transmembrane region and a unique cytoplasmic domain of 24 amino acids containing the sequence GFFRS. The presence of 22 inserted amino acids in the extracellular stalk portion (amino acids 804-826) distinguishes the α11 integrin sequence from other integrin α-chains. Fluorescence in situ hybridization maps the integrin α11 gene to chromosome 15q23, in the vicinity of an identified locus for Bardet-Biedl syndrome. Based on Northern blotting integrin α11 mRNA levels are high in adult human uterus and in heart, and intermediate in skeletal muscle and some other tissues tested. During in vitro myogenic differentiation, α11 mRNA and protein are up-regulated. Studies of ligand binding properties show that α11 binds collagen type I Sepharose and cultured muscle cells localize α11 into focal contacts on collagen type I. The integrin or the subunit α11 can be used as marker or target of all types of cells. The integrin or subunit α11 thereof can be used as marker or target in different physiol. or therapeutic methods. They can also be used as active ingredients in pharmaceutical compns. and vaccines.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT Mesenchyme
(stem cell; cloning, characterization and physiol. and therapeutic uses of human integrin heterodimer and its novel subunit α

L5 ANSWER 34 OF 53 BIOTECHNO COPYRIGHT 2007 Elsevier Science B.V. on STN
DUPLICATE
ACCESSION NUMBER: 2001:32844310 BIOTECHNO
TITLE: .alpha.11β1 integrin is a receptor for interstitial collagens involved in cell migration and collagen reorganization on mesenchymal nonmuscle cells
AUTHOR: Tiger C.-F.; Fougerousse F.; Grundstrom G.; Veiling T.; Gullberg D.
CORPORATE SOURCE: D. Gullberg, Department of Medical Biochemistry, Biomedical Center, Uppsala University, S-75123 Uppsala, Sweden.
E-mail: donald.gullberg@icm.uu.se
SOURCE: Developmental Biology, (01 SEP 2001), 237/1 (116-129), 73 reference(s)
CODEN: DEBIAO ISSN: 0012-1606
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AB .alpha.11β1 integrin constitutes a recent addition to the integrin family. Here, we present the first in vivo analysis of .alpha.11 protein and mRNA distribution during human embryonic development. .alpha.11 protein and mRNA were present in various mesenchymal cells around the cartilage anlage in the developing skeleton in a pattern similar to that described for the transcription factor scleraxis, .alpha.11 was also expressed by mesenchymal cells in intervertebral discs and in keratocytes in cornea, two sites with highly organized collagen networks. Neither .alpha.11 mRNA nor .alpha.11 protein could be detected in myogenic cells in human embryos. The described expression pattern is compatible with .alpha.11β1 functioning as a receptor for interstitial collagens in vivo. To test this hypothesis in vitro, full-length human .alpha.11 cDNA was stably transfected into the mouse satellite cell line C2C12, lacking endogenous collagen receptors, .alpha.11β1 mediated cell adhesion to collagens I and IV (with a preference for collagen I) and formed focal contacts on collagens. In addition, .alpha.11β1 mediated contraction of fibrillar collagen gels in a manner similar to α2β1, and supported migration on collagen I in response to chemotactic stimuli. Our data support a role for .alpha.11β1 as a receptor for interstitial collagens on mesenchymally derived cells and suggest a multifunctional role of .alpha.11β1 in the recognition and organization of interstitial collagen matrices during development. .COPYRGT. 2001 Academic Press.
TI .alpha.11β1 integrin is a receptor for interstitial collagens involved in cell migration and collagen reorganization on mesenchymal nonmuscle cells
AB .alpha.11β1 integrin constitutes a recent addition to the integrin family. Here, we present the first in vivo analysis of .alpha.11 protein and mRNA distribution during human embryonic development. .alpha.11 protein and mRNA were present in various mesenchymal cells around the cartilage anlage in the developing skeleton in a pattern similar to that described for the transcription factor scleraxis, .alpha.11 was also expressed by mesenchymal cells in intervertebral discs and in keratocytes in cornea, two sites with highly organized collagen networks. Neither .alpha.11 mRNA nor .alpha.11 protein could be detected in myogenic cells in human embryos. The described expression pattern is compatible with .alpha.11β1 functioning as a receptor for

interstitial collagens in vivo. To test this hypothesis in vitro, full-length human .alpha.11 cDNA was stably transfected into the mouse satellite cell line C2C12, lacking endogenous collagen receptors, .alpha.11β1 mediated cell adhesion to collagens I and IV (with a preference for collagen I) and formed focal contacts on collagens. In addition, .alpha.11β1 mediated contraction of fibrillar collagen gels in a manner similar to α2β1, and supported migration on collagen I in response to chemotactic stimuli. Our data support a role for .alpha.11β1 as a receptor for interstitial collagens on mesenchymally derived cells and suggest a multifunctional role of .alpha.11β1 in the recognition and organization of interstitial collagen matrices during development.

L5 ANSWER 32 OF 53 BIOTECHNO COPYRIGHT 2007 Elsevier Science B.V. on STN
DUPLICATE

ACCESSION NUMBER: 2002:35248276 BIOTECHNO
TITLE: Analysis of the human integrin α11 gene (ITGA11) and its promoter
AUTHOR: Zhang W.-M.; Popova S.N.; Bergman C.; Velling T.; Gullberg M.K.; Gullberg D.
CORPORATE SOURCE: D. Gullberg, Department of Medical Biochemistry, Biomedical Center, Uppsala University, Husargatan 3, S-751 23 Uppsala, Sweden.
E-mail: donald.gullberg@imbim.uu.se
SOURCE: Matrix Biology, (2002), 21/6 (513-523), 46 reference(s)
CODEN: MTBOEC ISSN: 0945-053X
PUBLISHER ITEM IDENT.: S0945053X02000549
DOCUMENT TYPE: Journal; Article
COUNTRY: Netherlands
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Integrin .alpha.11β1 is a collagen receptor which is expressed in a subset of mesenchymally-derived tissues during embryogenesis. Based on available human chromosome 15-derived sequences and genomic PCR, the complete exon structure of ITGA11, including the proximal promoter, was assembled into 30 exons. The inserted region (encoding amino acids 804-826) distinguishing . alpha.11 from other integrin α chains, was placed in the very beginning of exon 20. PCR data failed to show alternative splicing of RNA transcribed from this region. Using the oligo-capping technique a major transcription start site was mapped 30 nucleotides upstream of the translation start and identified as an abbreviated initiator sequence. Promoter sequence analysis in silico suggested the presence of multiple binding sites for transcription factors in the region upstream of the transcription start. 3 kb of the 5' flanking sequence was isolated and used to generate luciferase promoter constructs. In the fibrosarcoma cell line HT1080 a core promoter [nt (-)127-(+)25], a potential silencer region [nt (-)400-(-)127] and a potential enhancer region [nt (-)1519-(-)400], were identified as being important for .alpha.11 transcription in mesenchymal cells. Furthermore, studies of the promoter region will provide valuable information regarding the molecular mechanisms underlying the cell- and tissue- specific expression pattern of ITGA11.

AB Integrin .alpha.11β1 is a collagen receptor which is expressed in a subset of mesenchymally-derived tissues during embryogenesis. Based on available human chromosome 15-derived sequences and genomic PCR, the complete exon structure of ITGA11, including the proximal promoter, was assembled into 30 exons. The inserted region (encoding amino acids 804-826) distinguishing . alpha.11 from other integrin α chains, was placed in the very beginning of exon 20. PCR data failed to show alternative. . . (-)127-(+)25], a potential silencer region [nt (-)400-(-)127] and a potential enhancer region [nt (-)1519-(-)400], were identified as being important for .alpha.11 transcription in mesenchymal cells. Furthermore, studies of the promoter region will provide valuable information regarding the molecular mechanisms underlying the cell- and tissue-. . .

L5 ANSWER 30 OF 53 DISSABS COPYRIGHT (C) 2007 ProQuest Information and Learning Company; All Rights Reserved on STN

ACCESSION NUMBER: 2003:29641 DISSABS Order Number: AAIC809995 (not available for sale by UMI)

TITLE: Cellular interactions with extracellular matrix during development and in muscle disease

AUTHOR: Tiger, Carl-Fredrik [Ph.D.]

CORPORATE SOURCE: Uppsala Universitet (Sweden) (0903)

SOURCE: Dissertation Abstracts International, (2002) Vol. 63, No. 4C, p. 723. Order No.: AAIC809995 (not available for sale by UMI). Uppsala University Library, Box 510, SE-751 20 Uppsala, Sweden. 39 pages.
ISBN: 91-554-5328-7.

DOCUMENT TYPE: Dissertation

FILE SEGMENT: DAI

LANGUAGE: English

AB The formation and maintenance of tissues in multicellular animals are crucially dependent on cellular interactions with the extracellular matrix (ECM). Two different studies on such interactions are presented herein.

Studies on expression of laminins in normal and dystrophic skeletal muscle, clarified a much debated issue regarding discrepancies seen for laminin α1-chain expression between human and mouse tissues. Lack of laminin α1-chain expression was verified in both mouse and human skeletal muscle. Furthermore, the earlier discrepancies seen for laminin α1-chain expression was explained by showing that an antibody-reagent, commonly used in human studies, recognised the laminin α5-chain rather than the laminin α1-chain.

The integrin .alpha.11-chain (forming . alpha.11β1 integrin) is the latest addition to the integrin receptor family, and belongs to the I domain-containing group of integrin α-chains. Previous studies had shown that . alpha. 11β1 is a collagen receptor. In the present study, the in vitro and in vivo functions of the .alpha.11-chain were further characterised. Distribution studies on embryonic human and mouse tissues showed that the .alpha.11-chain was expressed on mesenchymal cells in the developing tendon, perichondrium, intervertebral disc, and cornea. The interactions of . alpha.11β1 integrin with collagen type I and IV were studied in vitro. The .alpha.11β1 bound to these collagens in a manner similar to integrin α2β1 (with collagen type I being the preferred ligand for .alpha.11 β1). Furthermore, . alpha.11β1 was shown to mediate migration on collagen type I coated surfaces, and to mediate contraction of collagen type I gels. The in vivo functions of the . alpha.11-chain were investigated by the generation of integrin .alpha.11-chain null-mice, using gene targeted disruption of the itga11 in embryonic stem cells. Two independent lines of mice lacking .alpha.11 protein were generated. Phenotypic analysis of these mice indicated a role for . alpha.11β1 in the formation of the musculoskeletal system.

AB . . . that an antibody-reagent, commonly used in human studies, recognised the laminin α5-chain rather than the laminin α1-chain.

L5 ANSWER 29 OF 53 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:859070 CAPLUS
DOCUMENT NUMBER: 142:20235
TITLE: Structure and function of α11β1 integrin
AUTHOR(S): Gullberg, Donald; Popova, Svetlana N.; Tiger, Carl-Fredrik
CORPORATE SOURCE: Department of Medical Biochemistry and Microbiology, Uppsala University, Uppsala, Swed.
SOURCE: I Domains in Integrins (2003), 67-81. Editor(s): Gullberg, Donald. Landes Bioscience: Georgetown, Tex. CODEN: 69FYF3; ISBN: 0-306-47836-6
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
AB A review. The α11 integrin chain constitutes the latest addition to the integrin family. α11β1 Was originally identified on cultured human muscle cells, but recent studies have shown that it is not expressed on muscle cells in vivo. It remains to be determined if satellite cells in regenerating muscle express α11. Distribution data indicate that the .alpha.11 chain in vivo is expressed on a subset of mesenchymal cells in the developing human embryo. Expression is high in the developing musculoskeletal system in areas of cartilage, bone and in tendon formation. High .alpha.11 expression is also seen in mesenchymal tissues characterized by elaborately organized collagen matrixes such as the intervertebral disk and the cornea. In agreement with the distribution data, ligand binding studies suggest that α11 prefers collagen I over collagen IV. We will review the current knowledge about α11β1 and discuss the possible in vivo functions of α11β1 and also address the issue of functional redundancy among collagen-binding integrins.
REFERENCE COUNT: 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
AB A review. The α11 integrin chain constitutes the latest addition to the integrin family. α11β1 Was originally identified on cultured human muscle cells, but recent studies have shown that it is not expressed on muscle cells in vivo. It remains to be determined if satellite cells in regenerating muscle express α11. Distribution data indicate that the .alpha.11 chain in vivo is expressed on a subset of mesenchymal cells in the developing human embryo. Expression is high in the developing musculoskeletal system in areas of cartilage, bone and in tendon formation. High .alpha.11 expression is also seen in mesenchymal tissues characterized by elaborately organized collagen matrixes such as the intervertebral disk and the cornea. In agreement with the distribution data, ligand binding studies suggest that α11 prefers collagen I over collagen IV. We will review the current knowledge about α11β1 and discuss the possible in vivo functions of α11β1 and also address the issue of functional redundancy among collagen-binding integrins.

ANSWER 20 OF 53 LIFESCI COPYRIGHT 2007 CSA on STN DUPLICATE 7
ACCESSION NUMBER: 2004:82805 LIFESCI
TITLE: The mesenchymal alpha 11 beta 1 integrin attenuates PDGF-BB-stimulated chemotaxis of embryonic fibroblasts on collagens
AUTHOR: Popova, S.N.; Rodriguez-Sanchez, B.; Liden, A.; Betsholtz, C.; Van den Bos, T.; Gullberg, D.
CORPORATE SOURCE: Department of Medical Biochemistry and Microbiology, Biomedical Center, Uppsala, Sweden; E-mail: donald.gullberg@biomed.uib.no
SOURCE: Developmental Biology [Dev. Biol.], (20040600) vol. 270, no. 2, pp. 427-442.
ISSN: 0012-1606.
DOCUMENT TYPE: Journal
FILE SEGMENT: N
LANGUAGE: English
SUMMARY LANGUAGE: English
AB alpha 11 beta 1 constitutes the most recent addition to the integrin family and has been shown to display a binding preference for interstitial collagens found in mesenchymal tissues. We have previously observed that when alpha 11 beta 1 integrin is expressed in cells lacking endogenous collagen receptors, it can mediate PDGF-BB-dependent chemotaxis on collagen I in vitro. To determine in which cells PDGF and alpha 11 beta 1 might cooperate in regulating cell migration in vivo, we studied in detail the expression and distribution of alpha 11 integrin chain in mouse embryos and tested the ability of PDGF isoforms to stimulate the alpha 11 beta 1-mediated cell migration of embryonic fibroblasts. Full-length mouse alpha 11 cDNA was sequenced and antibodies were raised to deduced alpha 11 integrin amino acid sequence. In the embryonic mouse head, alpha 11 protein and RNA were localized to ectomesenchymally derived cells. In the periodontal ligament, alpha 11 beta 1 was expressed as the only detectable collagen-binding integrin, and alpha 11 beta 1 is thus a major receptor for cell migration and matrix organization in this cell population. In the remainder of the embryo, the alpha 11 chain was expressed in a subset of mesenchymal cells including tendon/ligament fibroblasts, perichondrial cells, and intestinal villi fibroblasts. Most of the alpha 11-expressing cells also expressed the alpha 2 integrin chain, but no detectable overlap was found with the alpha 1 integrin chain. In cells expressing multiple collagen receptors, these might function to promote a more stable cell adhesion and render the cells more resistant to chemotactic stimuli. Wild-type embryonic fibroblasts activated mainly the PDGF beta receptor in response to PDGF-BB and migrated on collagens I II III IV, V, and XI in response to PDGF-BB in vitro, whereas mutant fibroblasts that lacked alpha 11 beta 1 in their collagen receptor repertoire showed a stronger chemotactic response on collagens when stimulated with PDGF-BB. In the cellular context of embryonic fibroblasts, alpha 11 beta 1 is thus anti-migratory. We speculate that the PDGF BB-dependent cell migration of mesenchymal cells is tightly regulated by the collagen receptor repertoire, and disturbances of this repertoire might lead to unregulated cell migration that could affect normal embryonic development and tissue structure.
TI The mesenchymal alpha 11 beta 1 integrin attenuates PDGF-BB-stimulated chemotaxis of embryonic fibroblasts on collagens
AB alpha 11 beta 1 constitutes the most recent addition to the integrin family and has been shown to display a binding preference for interstitial collagens found in mesenchymal tissues. We have previously observed that when alpha 11 beta 1 integrin is expressed in cells lacking endogenous collagen receptors, it can mediate PDGF-BB-dependent chemotaxis on collagen I in vitro. To determine

in which cells PDGF and alpha 11 beta 1 might cooperate in regulating cell migration in vivo, we studied in detail the expression and distribution of alpha 11 integrin chain in mouse embryos and tested the ability of PDGF isoforms to stimulate the alpha 11 beta 1-mediated cell migration of embryonic fibroblasts. Full-length mouse alpha 11 cDNA was sequenced and antibodies were raised to deduced alpha 11 integrin amino acid sequence. In the embryonic mouse head, alpha 11 protein and RNA were localized to ectomesenchymally derived cells. In the periodontal ligament, alpha 11 beta 1 was expressed as the only detectable collagen-binding integrin, and alpha 11 beta 1 is thus a major receptor for cell migration and matrix organization in this cell population. In the remainder of the embryo, the alpha 11 chain was expressed in a subset of mesenchymal cells including tendon/ligament fibroblasts, perichondrial cells, and intestinal villi fibroblasts. Most of the alpha 11-expressing cells also expressed the alpha 2 integrin chain, but no detectable overlap was found with the alpha 1 integrin chain.. . . on collagens I II III IV, V, and XI in response to PDGF-BB in vitro, whereas mutant fibroblasts that lacked alpha 11 beta 1 in their collagen receptor repertoire showed a stronger chemotactic response on collagens when stimulated with PDGF-BB. In the cellular context of embryonic fibroblasts, alpha 11 beta 1 is thus anti-migratory. We speculate that the PDGF BB-dependent cell migration of mesenchymal cells is tightly regulated by the collagen receptor repertoire, and disturbances of this repertoire might lead to unregulated cell migration. . .

L5 ANSWER 10 OF 53 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN DUPLICATE 5

ACCESSION NUMBER: 2006:314910 BIOSIS
DOCUMENT NUMBER: PREV200600312498
TITLE: Tandem Sp1/Sp3 sites together with an Ets-1 site cooperate to mediate alpha 11 integrin chain expression in mesenchymal cells.
AUTHOR(S): Lu, Ning; Heuchel, Rainer; Barczyk, Malgorzata; Zhang, Wan-Ming; Gullberg, Donald [Reprint Author]
CORPORATE SOURCE: Univ Bergen, Dept Biomed, Div Physiol, Jonas Lies Vei 91, N-5009 Bergen, Norway
donald.gullberg@biomed.uib.no
SOURCE: Matrix Biology, (MAR 2006) Vol. 25, No. 2, pp. 118-129. ISSN: 0945-053X.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 14 Jun 2006
Last Updated on STN: 14 Jun 2006

AB all 1 integrin is a collagen receptor, which is expressed in a highly regulated manner in a specific subset of ectomesenchymally and mesodermally derived cells. We previously established that a 3 kb region upstream of the transcription start site of the ITGA11 gene efficiently induced alpha 11 transcription in a cell-type specific manner. Using the human fibrosarcoma cell line HT 1080 and human skin fibroblasts, we now report that the majority of the activity in the proximal promoter resides in a region spanning nt +25 to nt -176. Mutation and deletion analyses using luciferase reporter assays showed that tandem low affinity Sp1/Sp3 binding sites, together with an Ets-1-like binding site, were needed for the proximal promoter activity in mesenchymal cells. EMSAs and supershift assays showed that Sp1 and Sp3 both bind to the Sp1/Sp3 binding sites, whereas occupation of the Ets-1 binding site appears to be Sp3-dependent. Chromatin immunoprecipitation assays verified that Sp1, Sp3 and Ets-1 can bind the promoter in vivo. In heterologous Drosophila SL2 cells, Sp1, Sp3 and Ets-1 all transactivated the alpha 11 promoter, with Sp1 being the most efficient activator. The lack of any synergistic effect of Sp1/Sp3 and Ets-1 in SL2 cells indicates that an Ets family member other than Ets-1 might be involved in regulating alpha 11 transcription in mesenchymal cells. The central role of Sp1 in regulating alpha 11 RNA transcription was further verified by the ability of the Sp1 inhibitor mithramycin A to efficiently attenuate a 11RNA and protein levels in primary fibroblasts. The proximal promoter itself was able to confer cell-type specific transcription on HT1080 cells and embryonic fibroblasts but not on U2OS and JAR cells. We speculate that the "mesenchymal signature" of alpha 11 integrin gene expression is controlled by the activity of Sp1/Sp3, fibroblast-specific combinations of Ets family members and yet unidentified enhancer-binding transcription factors. (c) 2005 Elsevier B.V./International Society of Matrix Biology. All rights reserved.

TI Tandem Sp1/Sp3 sites together with an Ets-1 site cooperate to mediate alpha 11 integrin chain expression in mesenchymal cells.

AB. . . Sp1/Sp3 and Ets-1 in SL2 cells indicates that an Ets family member other than Ets-1 might be involved in regulating alpha 11 transcription in mesenchymal cells. The central role of Sp1 in regulating alpha 11 RNA transcription was further verified by the ability of the. . . cell-type specific transcription on HT1080 cells and embryonic fibroblasts but not on U2OS and JAR cells. We speculate that the "mesenchymal signature" of alpha 11 integrin gene expression is controlled by the activity of Sp1/Sp3, fibroblast-specific combinations of Ets family members and yet unidentified enhancer-binding. . .

L5 ANSWER 5 OF 53 USPATFULL on STN
ACCESSION NUMBER: 2006:95175 USPATFULL
TITLE: Integrin heterodimer and a subunit thereof
INVENTOR(S): Lundgren-Åkerlund, Evy, Bjarred, SWEDEN
PATENT ASSIGNEE(S): Cartela AB, Bjarred, SWEDEN (non-U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 7029858	B1	20060418	
	WO 9951639		19991014	
APPLICATION INFO.:	US 1999-647544		19990331	(9)
	WO 1999-SE544		19990331	
			20000426	PCT 371 date

	NUMBER	DATE
PRIORITY INFORMATION:	SE 1998-1164	19980402
	SE 1999-319	19990128

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Chan, Christina
ASSISTANT EXAMINER: Haddad, Maher M.
LEGAL REPRESENTATIVE: Buchanan Ingersoll PC
NUMBER OF CLAIMS: 10
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 23 Drawing Figure(s); 23 Drawing Page(s)
LINE COUNT: 3572
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A recombinant or isolated integrin heterodimer comprising a novel subunit α10 in association with a subunit β is described. The α10 integrin may be purified from bovine chondrocytes on a collagen-type-II affinity column. The integrin or the subunit α10 can be used as marker or target of all types of cells, e.g. of chondrocytes, osteoblasts and fibroblasts. The integrin or subunit α10 thereof can be used as marker or target in different physiological or therapeutic methods. They can also be used as active ingredients in pharmaceutical compositions and vaccines.

DETD A polyclonal peptide antibody raised against the cytoplasmic domain of . alpha.10 precipitated two protein bands with M.sub.r of approximately 160 kD (.alpha.10) and 125 kD (β1) under reducing conditions. Immunohistochemistry using the . alpha.10-antibody showed staining of the chondrocytes in tissue sections of human articular cartilage. The antibody staining was clearly specific since preincubation of the antibody with the . alpha.10-peptide completely abolished the staining. Immunohistochemical staining of mouse limb sections from embryonic tissue demonstrated that .alpha.10 is upregulated during condensation of the mesenchyme. This indicate that the integrin subunit .alpha.10 is important during the formation of cartilage. In 3 day old mice .alpha.10 was found to be the dominating collagen binding integrin subunit which point to that .alpha.10 has a key function in maintaining normal cartilage functions.

DETD FIG. 11 show that .alpha.10 integrin subunit is unregulated in the limb when the mesenchymal cells undergo condensation to form cartilage (a). Especially the edge of the newly formed cartilage has high expression of .alpha.10. The formation of cartilage is verified by the high expression of the cartilage specific collage type II (b). The control antibody against α1 integrin subunit showed only weak expression on the cartilage (c). In other experiments expression of .alpha.10 was found in all cartilage containing tissues in the 3 day old mouse including limbs, ribs and vertebrae. The upregulation of .alpha

.10 during formation of cartilage suggest that this integrin subunit is important both in the development of cartilage and bone and.

Two relatively newly discovered integrins, α10 [38, 39] and α11, [40, 41] have been shown to be collagen receptors that are expressed in cartilage. α10 has a cellular distribution that differs from α1 and α2 and is the dominant integrin during embryonic development. [39]α10 preferentially binds basement membrane collagens, as α1, whereas a11 resembles α2 showing specificity for fibril forming collagens. [42]